VIRTUALLY IMPERMEABLE FILM FOR USE AS MULCH AND IN BROADCAST FUMIGATION

Riccardo Rimini (Bruno Rimini Ltd)

BROMOSTOP® is a Virtually Impermeable film (VIF) produced by I.P.M. (Industrial Plastica Monregalese) of Italy. It was initially developed for use with Methyl Bromide but is suitable for use with other fumigants, including products containing Chloropicrin and 1,3-D. It is currently being supplied in two formats.

1) For use as mulch

This film is supplied 35 micron (1.38 mil) thick and in widths as required, typically 1.73 mt (68 ins). Its life expectancy is 9-12 months, but development work is being carried out by IPM to extend the life to 12 months or more, according to requirements..

Technical data about Bromostop® ref B612 for use as mulch

TEST	**UNIT**	**METHOD**	**TEST RESULT**
Thickness	mu	ISO 4593	35 ± 15%
Slow perforation strength	N	NF T 54-195 derived from ASTM D 4849.87	26 ± 10%
Slow perforation extensibility	mm	NF T 54-195 derived from ASTM D 4849.87	42 ± 10%
Tensile strength At break MD	N/mm²	ASTM D882	33 ± 15%
Tensile strength At break TD	N/mm²	ASTM D882	25 ± 15%
Elongation At break MD	%	ASTM D882	300 ± 15%
Elongation At break TD	%	ASTM D882	350 ± 15%
Methyl Bromide Permeability	g/m²xh	NFT 54-195 at 20° C	< 0.25
Permeability tests were carried out by the French Ministry of Agriculture Fishery and Food at the Laboratoire National de la Protection des Végétaux – Station d'Étude des Techniques de Fumigation et de la Protection des Denrées Stochées – Cenon France.			
Permeability tests carried out on the basis of this standard gave a result of over 60 for LDPE, i.e. more than 240 times greater than for Bromostop® B612 mulch			

FIELD TESTS

Testing has been carried out by farmers in the field in California to ensure the product can be laid satisfactorily. Full scale tests are now been carried out by scientists in California.

VIRTUALLY IMPERMEABLE FILM FOR USE AS MULCH AND IN BROADCAST FUMIGATION

2) For use in broadcast fumigation

This film is supplied 22 micron (0.87 mil) thick and 4 metres (13ft 1 inch) wide. It has been used extensively in Europe for some two years where it is required to stay on the ground for a maximum of 20 days.

Technical data about Bromostop® for use in broadcast fumigation

TEST	**UNIT**	**METHOD**	**TEST RESULT**
Thickness	mu	ISO 4593	22 ± 15%
Slow perforation strength	N	NF T 54-195 derived from ASTM D 4849.87	21 ± 10%
Slow perforation extensibility	mm	NF T 54-195 derived from ASTM D 4849.87	39 ± 10%
Tensile strength At break MD	N/mm²	ASTM D882	33 ± 15%
Tensile strength At break TD	N/mm²	ASTM D882	25 ± 15%
Elongation At break MD	%	ASTM D882	280 ± 15%
Elongation At break TD	%	ASTM D882	300 ± 15%
Methyl Bromide Permeability	g/m²xh	NFT 54-195 at 20° C	< 0.20
Permeability tests were carried out by the French Ministry of Agriculture Fishery and Food at the Laboratoire National de la Protection des Végétaux – Station d'Étude des Techniques de Fumigation et de la Protection des Denrées Stochées – Cenon France.			
Permeability tests carried out on the basis of this standard gave a result of over 60 for LDPE, i.e. more than 300 times greater than Bromostop® broadcast film			